

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claim Amendments

Claim 1 has been amended to replace the phrase “x represents a number of 0.01 to 0.2” with “x represents a number of 0.001 to 0.2”, based on page 5, line 25 of the specification;

to incorporate the phrase “in the presence of a silicon-based compound”;

to specify that Aⁿ⁻ is “SiO(OH)₃⁻, SiO₂(OH)₂²⁻, Si₂O₆(OH)₆²⁻, SiO₄⁴⁻, Si₄O₈(OH)₄⁴⁻ or a mixture thereof”, based on original claim 2;

to specify an average secondary particle diameter of 0.1 to 7 µm, based on page 6, line 34 of the specification; and

to specify a BET surface area as 5 to 40 m²/g, based on original claim 10.

Claims 12, 17 and 25 have been amended similarly.

New claim 30 has been added, and specifies that the silicon-based compound is “water glass, synthetic amorphous silica or tetraethoxysilane”, based on page 37, Table 7 of the specification.

Claims 2, 8-10, 13, 15 and 16 have been cancelled, without prejudice or disclaimer.

Consideration After Final Rejection

Although this Amendment is presented after final rejection, the Examiner is respectfully requested to enter the amendments and consider the remarks, as they place the application in condition for allowance.

Patentability Arguments

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Rejection Under 35 U.S.C. § 102(b)

Claims 1, 2, 8-11 and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hidekazu et al. (JP 09-278435).

This rejection is respectfully traversed for the following reasons.

The calcium hydroxide of Applicants' claims contains $\text{SiO}(\text{OH})_3^-$, $\text{SiO}_2(\text{OH})_2^{2-}$, $\text{Si}_2\text{O}_6(\text{OH})_6^{2-}$, SiO_4^{4-} , or $\text{Si}_4\text{O}_8(\text{OH})_4^{4-}$ as A^{n-} . On the contrary, Hidekazu discloses a calcium hydroxide digested with water and an organic acid, such as citric acid or tartaric acid. Thus, Hidekazu does not disclose the silicon-based compound of Applicants' amended claims. Therefore, since Hidekazu fails to teach each and every limitation of Applicants' claims, the subject matter of the present claims is not anticipated by the teachings of Hidekazu.

Thus, it is respectfully requested that the above-rejection be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claims 12, 13, 15-19, 21, 24, 26, 28 and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata et al. (U.S. Patent No. 6,592,834) in view of Hidekazu et al. [Applicants presume that the Examiner also intended to reject claim 25 in this rejection.]

This rejection is respectfully traversed for the following reasons.

Anion (A^{n-})

The invention of Miyata provides a calcium hydroxide obtained by slaking a quicklime (calcium oxide) having small contents of impurities, such as silicone dioxide (column 2, lines 33-35). Miyata states that a quicklime having a silicon dioxide content of 0.2 % by weight or less is preferably used, particularly preferably 0.1 % by weight or less. (Please see column 3, lines 49-51 of the reference.) Further, the calcium hydroxide of Miyata contains 0.01 % or less of SiO_2 , as described in Examples 1, 2, 4 and 5 of the reference. Therefore, it is clear from the teachings of Miyata that SiO_2 is regarded as an unfavorable substance.

On the contrary, in Applicants' invention, the silicon-based compound is intentionally contained in the calcium hydroxide. Specifically, the calcium hydroxide of Applicants' claims contains a certain amount of anion (A^{n-}), which is derived from a silicon-based compound. In fact, the calcium hydroxide of the present invention may contain 0.05 wt% or more of SiO_2 .

derived from a silicon-based compound, as described in Table 3 (Examples 21-25) and Table 8 (Examples 39-43) of Applicants' specification.

Thus, the content of SiO₂ in the present invention may be differentiated from that of Miyata. Additionally, as discussed above, Hidekazu fails to teach or suggest a silicon-based compound, and thus, fails to remedy the deficiencies of Miyata in this regard.

Solid solution

Additionally, Aⁿ⁻ is contained in calcium hydroxide as a solid solution in Applicants' invention. (Please see page 5, line 27 of the specification.)

In support of this assertion, Applicants enclose herewith two X-ray diffraction charts. The first is the X-ray diffraction chart of the calcium hydroxide of Example 23, which contains 3.0 wt % of SiO₂. Also, enclosed herewith is the X-ray diffraction chart of calcium hydroxide of JCPDS (Joint Committee of Powder Diffraction Standard). By comparing these charts, it is readily understood that there is no peak which indicates the existence of SiO₂ in the chart of the present invention. Therefore, SiO₂ is contained in the calcium hydroxide as a solid solution in the present invention.

The calcium hydroxide of the present invention has fine crystals due to the inhibition of crystal growth during its production process by the addition of a silicon-based compound. Accordingly, the calcium hydroxide of the present invention has a large specific surface area, is highly active and has excellent capabilities of acid neutralization and halogen capturing. Hence, it can be suitably used as a stabilizer for synthetic resins. (Please see page 4, lines 9-15 of Applicants' specification.)

Accordingly, for the reasons set forth above, the calcium hydroxide of the present invention would not have been obvious to one of ordinary skill in the art based on the teachings of Miyata, or the combination of Miyata and Hidekazu.

Thus, it is respectfully requested that the above-rejection be withdrawn.

Claims 20, 23 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata et al. in view of Hidekazu et al., further in view of Katsuki et al. (U.S. Patent No. 6,291,570). Claim 22 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata et

al. in view of Hidekazu et al., further in view of Katsuki et al. with evidence provided by Miyata et al. (U.S. Patent No. 3,879,525) and Kooli et al. (J. Mat. Sci., 1993).

These rejections are respectfully traversed for the following reasons.

The claims are directly or indirectly dependent upon claims 19 or 25, and thus, are patentable over Miyata et al. in view of Hidekazu et al. for the reasons discussed above. Neither Katsuki et al. nor Kooli et al. remedy the deficiencies discussed above.

Furthermore, the combination of the calcium hydroxide and hydrotalcite (claim 19) demonstrates better thermal stability in comparison with the calcium hydroxide alone, or hydrotalcite alone, as shown in Tables 10, 11 and 12 of Applicants' specification.

For the reasons set forth above, the subject matter of Applicants' claims is patentable over the cited combinations of references. Thus, it is respectfully requested that the above-rejections be withdrawn.

Conclusion

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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